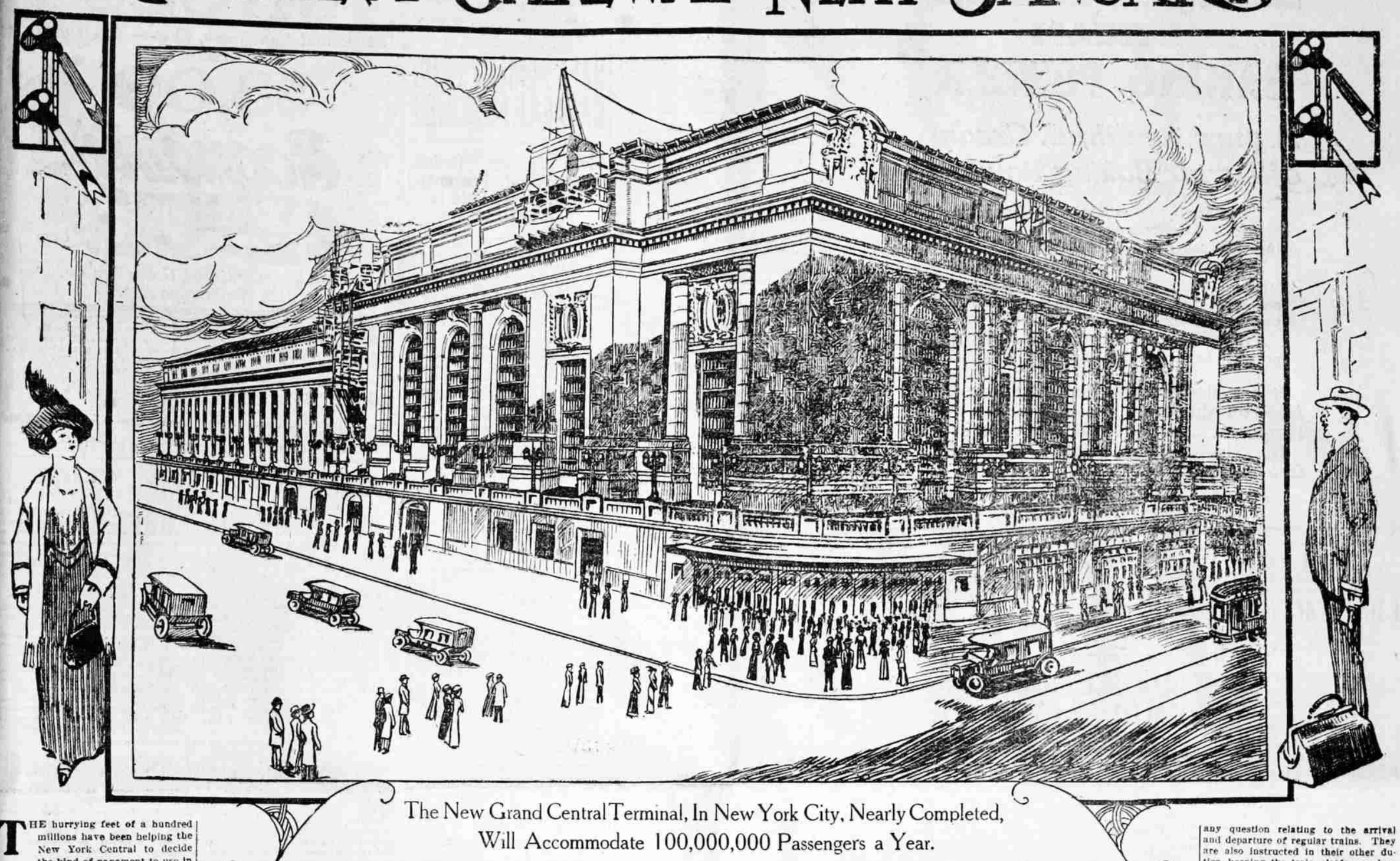
GETTING READY TO OPEN THE WORLD'S GREATEST GATEWAY NEXT JANUARY



The New Grand Central Terminal, In New York City, Nearly Completed, Will Accommodate 100,000,000 Passengers a Year.

THE hurrying feet of a hundred millions have been helping the New York Central to decide the kind of pavement to use in the passageways of its superb new passenger terminal, which will be opened about Jan. 31. The suburban station, for the accommodation of the vast army of commuters, was opened last October. The suburban concourse is of the same dimensions as the main concourse—300 by 120 feet—except as to height of ceiling. It is a station complete in all details, the same as the main concourse for through passengers. The public also has aided in determining the easiest slope for the ramps that lead from one level to another instead of stairways. The average eyesight of the innumerable throng has settled the size of the letters and their spacing in the signs at the entrances to the train platforms—the places where there is time for only a hasty glance. In these and in many other ways have the people themselves assisted in the making of the new Grand Central terminal the most marvelous city gate in all the world.

All Move In Straight Lines.

The great currents of traffic, that are at their height at night and at morning, are kept separate. They do not meet or mingle. Each flows smoothly in its proper direction. This is because, like the man running to catch his train, they go in a straight line. There are no corners to turn. The signs begin at the subway and at the exits from the train platforms. They start the crowd in the right direction, and all it has to do is to keep moving straight ahead, which is the most natural thing in the world. The passageway from the inbound station to the subway and the other one from the subway to the trains each is as straight as a ruler's edge.

All this sounds perfectly simple and easy of accomplishment. It might be if you were handling only a thousand people, but when it comes to a probable hundred million the problem becomes complicated. The same principle of the straight line—the shortest distance between two points—is applied to handling baggage as well. The outbound baggage goes straight through the subway at Forty-fifth street and the inbound through the other baggage subway at Forty-third street. It is the same way with the mails from the great branch postoffice. The streams never meet. There is no delay, no lost motion.

The Man In a Hurry.

Enter the new station by practically whatever door you will and your forward progress to your train is continuous. You need take no backward steps. You even shorten the distance by going to the ticket office. There are so many windows at which tickets will be sold that there will be no waiting. The man who is in haste to buy a ticket for a train that is about to start need not come in contact with the one who is standing at the window asking questions and planning his journey. There are plenty of places for each—the hurried and the leisurely.

Ticket in hand, a man rushes across the big concourse. He is going on the Twentieth Century Limited. He has no time to spare. From the two points on either side of the concourse where he may come in he has a complete view of the train gate line. He may sweep it from end to end at a glance. Over each gate is a triangular box that projects out from the wall. It shows the number of the track, the name of the train and the time it departs. The two visible sides of this "box" are placed at a certain angle. It took a long time—months of patient study and testing with thousands of eyes—to get these signs so that each should be always exactly at right angles with the line of vision of the hurried passenger seeking his train.

If the man is going to stop at some city east of Chicago or whatever is the ultimate destination of the train he is anxious to know if the train he has selected will halt there. Probably he has been in too much of a rush to inquire, or, in his haste, has forgotten. Once he has picked out the train from the sign over the gate he hurries toward it. When he is a hundred feet away he can read the list of stops on the station board.

Platforms Level With Car Floors.

The long station platforms are on the same level as the platforms and the floors of the cars. That is one of the most important things from the standpoint of safety and comfort. The necessity of the passenger going up and down the car steps is eliminated. It cuts in half the time of loading and unloading passengers. It has been found by experimenting that the ordinary suburban train takes eighty seconds to unload when the passengers have to descend the car steps. It takes forty seconds when they walk directly onto the station platform. In the old way the passenger had to climb down three and one-half feet, which later he had to ascend to get out into the street. There is an additional saving of seconds and of energy in the new way; also it is much safer. The risk of accident practically disappears. But such a thing, like everything else about a big station like this, no matter if it seems an unimportant detail, adds tremendously to the expense.

Millions For Temporary Work.

Literally millions of dollars have been spent all through this great terminal to make it better than anything ever known before and to eliminate so far as humanly possible every chance of accident. In the millions that have been expended for convenience and comfort should be included the "temporary work" of which no trace now remains. Yet it cost more than $2,000,000. This was the extra expense for carrying on the business without inconveniencing the passengers while the old station was being demolished—such things as temporary train sheds, trestles built in the yards for carrying trains over excavations, and things like that which would not have been necessary in the creation of a terminal on ground not in constant use.

A New and Marvelous Bumper.

The matter of bumpers at the ends of tracks would not seem worthy of much study, yet it is another of the items that has received years of consideration. The ordinary station bumper is simply two heavily braced uprights that will stop a train going at a moderate rate of speed. Such bumpers cost about $100 each to construct. Those which are being put in at the Grand Central terminal cost $5,000 each. There are forty of them. They are to insure a train against going into any of the columns or on to the concourse. They have to be exceptionally strong so as to take care of the extraordinarily heavy trains—ten to fifteen steel cars, each eighty-four feet long.

Never before has there been a bumper devised that will meet American conditions. The biggest ones in the world are in a station in Glasgow, Scotland. They have a capacity of resisting an impact of 500 tons moving at a speed of ten miles an hour. In the English trains the bumpers strike at the two lower corners of the car. In American trains the blow is received in the center of the car. Those being installed in the Grand Central terminal will have a capacity of 1,000 tons moving at ten miles an hour and will produce an absolute stop without accident to the train or to the structures behind the bumper. Such a shock is very rare, but when the emergency arises the bumper becomes very important. It took more than a year to design and build the first one, and that after eight years spent in studying and experimenting. It is only one of the many things designed to prevent problematic accidents which may never occur. They are essential for the maximum safety, but they add enormously to the cost of a big terminal.

Storing Electricity For Emergencies.

At frequent intervals throughout the station "yard"—the great network of tracks that spread fanwise in two levels south of Fiftieth street—there is a "battery house," in which is stored continually enough electricity to handle the business of its particular section at the "peak of the load" for from twenty minutes to half an hour independent of the dynamos and the other machinery in the big power and light plant. That means that if everything else should fail the storage batteries would keep the lights shining and the trains moving long enough to make repairs, and the general public probably would not know that anything was wrong. The business of the great terminal would continue without a hitch. The engineers say there has not been an interruption of the electric service for six years, but that they don't want any if it is humanly possible to prevent it.

Probably nowhere else in the world has so much important experimental research been carried on and so many vital problems solved for the public benefit as in the building of the Grand Central terminal.

Announcing Arrivals and Departures.

When an incoming train is about to arrive there is a great stir among the crowds of people awaiting it. They gather about the bulletin board and watch to see on which track it is coming in. The man at the board gets the news from the signal towers by means of the telautograph and chalks up the information. An improvement on this method has been devised and is being perfected so that it can be put in use later. The announcements of train arrivals will be made on a board that has illuminated or movable letters. These will be controlled from one of the towers in the yard. Instantly, as soon as the switches are set for an incoming train to end its journey on a certain track, the information will flash forth on the bulletin board. This will save a few seconds and there will be no possibility of error.

The announcing of outgoing trains will be done, as it has been for some time past in the temporary station, by magnaphones. At a central point a clear voiced man speaks into the instrument and his voice, magnified in volume, is reproduced simultaneously in every part of the waiting rooms from the trumpet-like horns that are placed inconspicuously against the walls. While the utility of this method depends, of course, on the clearness with which the announcer speaks, it is far ahead of the old way of calling the trains by a man walking about the station and making the announcements. The new way saves a good many minutes.

Paging Passengers.

Incidentally this system of sound waves transmitted from a central point will be used on even a larger scale than ever before for "paging" persons. It happens frequently that a business house suddenly finds it necessary to communicate with one of its representatives who has gone to the Grand Central to take a train for, say, Chicago. It is highly important that he be reached immediately to receive additional information or instructions. Perhaps a telegram has come in that renders his trip unnecessary. If it were not for this device this would be impossible. As it is, however, the firm calls up the information bureau. A moment later the mechanical announcers call out from one end of the station to the other, "Mr. Smith is wanted at the information bureau." "Mr. Smith" hears and heeds and hurries over. He is told to call up his office. He does so and the whole matter is arranged in no time.

In the temporary station many persons are now being paged. In the new station it is expected that the number will be much greater. This is simply one of the conveniences—the little details—whose sum total spells perfection.

"G. C. T."

It has taken several years to decide on the color of the uniforms that shall be worn by the employees in the new Grand Central terminal. The difficulty lay in getting a color of cloth that would look well and yet be conspicuous, yet not so striking as to subject its wearer to ridicule. Many kinds and shades were tried. Finally a bluish gray has been selected. The frock coat has a black collar and black lapels. On the lapels is the chief distinguishing mark, the letters "G. C. T." in gold thread in a medallion bordered in the same way. These initials, it has been found from many tests, meet the eye instantly. In future there can be no mistaking a hotel porter for a station employee if a man is not quite blind. The coats are made long so that in winter those employees who are exposed to the weather can wear a cardigan jacket underneath without spoiling the looks or the neatness of the uniform. The "red cap" porters will continue to wear their familiar headdress, but they will be put in neat uniforms.

Station Men Are Schooled.

All the station men—the whole organization of the Grand Central terminal that comes in contact with the public—are being schooled and rehearsed in their duties every day, getting ready for the opening of the new station. Even the "red cap" men participate in the drills. New men are given a time table and a station schedule covering the tracks on which certain trains usually arrive. They study these things until they are able to answer instantly any question relating to the arrival and departure of regular trains. They are also instructed in their other duties, keeping the train platforms clear of trucks and making the passengers as comfortable as possible and so on. Incidentally they are required to know the city's streets and transit lines as thoroughly as an experienced policeman, so they can direct strangers quickly and accurately.

Direct Subway Connections.

The new station will have direct connection with the subways, so that the incoming or outgoing passenger need not go into the street at all. To get to the temporary terminal that the railroad has been using in the interval between the demolition of the old one and the finishing of the new they have had to traverse a covered way. In that portion of it leading from Forty-second street to the entrance of the temporary station and waiting rooms a number of different kinds of pavement were installed a little more than a year ago in order to ascertain which would be the best to use in the most traveled passageways of the new terminal. They were in sections the full width of the walk. This stretch of sidewalk is trodden by more persons than any other bit of sidewalk in the world. It is calculated that more than 100,000,000 persons have walked over these sample pavements since they were put in place. The public has tested them and thus has made easy for the experts the work of selection.

Unusual Features.

There are so many new and convenient things in the new terminal that the list of them seems almost endless. From the moment it is opened in January next it will be one of the great show places of New York and one of the things in the city most worth seeing. One of its unique conveniences will be a large number of dressing rooms. If a man comes to the city for a brief stay, he can hire one of these rooms, take a bath, change his clothes, check his bag and go his way. When he is ready to depart he will not need to lose any time in getting to his train. Also there will be the finest restaurant in this terminal that is to be found in any railroad station in the world. It will be moderate in its charges, but in its appointments and details it will equal any of the most famous restaurants in New York or the capitals of Europe.